

HASEGAWA et al. -- 10/696,702
Attorney Docket: 061063-0306592

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1-6. (Canceled)

7. (Currently amended) A semiconductor manufacturing method which performs reactive gas processing, wherein, when a substrate carrying system inserts a substrate from an airtight space in the substrate carrying system into a reaction chamber, and when ~~[[said]]~~ the substrate is ejected from ~~[[said]]~~ the reaction chamber to ~~[[said]]~~ the airtight space, a reactive gas is fed into ~~[[said]]~~ the reaction chamber and reacts therein, the method comprising:

a substrate carrying step of measuring the moisture content in ~~[[said]]~~ the airtight space by ~~means of a first moisture measuring device which is connected to~~ [[said]] the airtight space~~[[.]] and thereafter, inserting and ejecting said substrate by means of said substrate carrying system; [[and]]~~

inserting the substrate from the airtight space in the substrate carrying system into the reaction chamber, or ejecting the substrate from the reaction chamber into the airtight space in the substrate carrying system; and

a gas processing step of performing ~~said reactive gas processing~~ a reactive-gas-process while measuring the moisture content in ~~[[said]]~~ the reaction chamber by ~~means of a second moisture measuring device, which is connected to~~ [[said]] the reaction chamber, after ~~[[said]]~~ the substrate carrying step, wherein

in the substrate carrying step, after it has been confirmed that the moisture content in the airtight space is lower than a first default value, the substrate is inserted from the airtight space into the reaction chamber, and the substrate is ejected from the reaction chamber to the airtight space; and

in the gas processing step, the reactive-gas-process starts after it has been confirmed that the moisture content in the reaction chamber is lower than a second default value.

8. (Canceled)

9. (Currently amended) The semiconductor manufacturing method according to claim ~~[[8]]~~ 7, at least said second default value being lower than 1 ppm.

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10. (Currently amended) The semiconductor manufacturing method according to claim 7, at least one of ~~[[said]]~~ the first moisture measuring device and ~~[[said]]~~ the second moisture measuring device comprising a laser moisture measuring device which radiates laser light into a tubular cell main body, connected to ~~[[said]]~~ the airtight space and ~~[[said]]~~ the reaction chamber, and measures an absorption spectrum of transmitted laser light.

11-15. (Cancelled).

16. (New) The semiconductor manufacturing method according to Claim 7 wherein the measurement of the moisture in the substrate carrying system is conducted in accordance with: an absorbant moisture measuring method; an electrostatic capacity moisture measuring method; or a qualitative analysis method.

17. (New) The semiconductor manufacturing method according to Claim 7 wherein the first default value of the moisture in the substrate carrying system is less than 5 ppm.

18. (New) The semiconductor manufacturing method according to Claim 7 wherein the first default value of the moisture in the substrate carrying system is less than 5 ppm.

19. (New) A semiconductor manufacturing method for conducting a reactive-gas-process and measuring moisture content in a semiconductor manufacturing device, the semiconductor manufacturing device provided with an insertion load lock chamber, an ejection load lock chamber, a substrate carrying system having a carrying chamber and an inner gastight space, and a plurality of process chambers for receiving substrates from the substrate carrying system, the method comprising:

measuring the moisture content in an inert gas in the insertion load lock chamber when the substrates are inserted into the insertion load lock chamber;

inserting the substrates into the carrying chamber and measuring the moisture content in the inert gas in the carrying chamber only when the measured moisture content in the inert gas in the insertion load lock chamber is less than a predetermined value;

inserting the substrates into the process chambers and measuring the moisture content in the inert gas in the process chambers only when the measured moisture content in the inert gas in the carrying chamber is less than a first default value;

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introducing a process gas into the process chambers and conducting epitaxial growth on the substrates only when the measured moisture content in the inert gas in the process chambers is less than a second default value;

measuring the moisture content in the process gas exahusted from the process chamber after conducting the epitaxial growth; and

measuring the moisture content in the inert gas in the ejection load lock chamber when the substrates are introduced into the ejection load lock chamber from the process chambers through the carrying chamber after conducting the epitaxial growth.

20. (New) The method according to Claim 19 wherein the first default value of the moisture content in the inert gas in the carrying chamber is 5 ppm, and the second default value of the moisture content in the inert gas in the process chamber is 1 ppm.